

CLAIM AMENDMENTS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-18 (Canceled)

19. (Currently Amended) A method of managing a memory bus, the method comprising:

- receiving a first memory access request from a first request agent that represents a first functional device and a second memory access request from a second request agent that represents a second functional device;
- loading a first access priority value into a first counter timer, wherein the first access priority value corresponds to a processing function that is provided by the first functional device;
- loading a second access priority value into a second counter timer, wherein the second access priority value corresponds to a different processing function that is provided by the second functional device;
- loading a timer resolution parameter into a control register, wherein the timer resolution parameter relates to an amount of time associated with a first counting cycle of the first counter timer and a second counting cycle of the second counter timer;
- dynamically adjusting a plurality of priority access values that includes the first priority access value and the second priority access value ~~in response to a user request,~~ wherein the plurality of priority access values are stored in ~~[[a]]~~ the control register; and
- dynamically adjusting the timer resolution parameter based on the activity level of the memory bus;

wherein the first functional device accesses ~~[[a]]~~ the memory bus before the second functional device when the first access priority value represents a higher priority than the second access priority value; and

wherein the second functional device accesses the memory bus before the first functional device when the second access priority value represents a higher priority than the first access priority value.

20. (Previously Presented) The method of Claim 19, wherein a bus elector compares the first access priority value to the second access priority value.

21. (Previously Presented) The method of Claim 19, wherein the first access priority value represents the higher priority when the first access priority value is greater than the second access priority value.

22. (Previously Presented) The method of Claim 19, wherein the first access priority value represents the higher priority when the first access priority value is lower than the second access priority value.

23. (Previously Presented) The method Claim 22, further comprising:
starting a first clock cycle when the first functional device accesses the memory bus; and
decrementing the second access priority value after the first clock cycle has expired.

24. (Previously Presented) The method of Claim 23, further comprising:
receiving a third memory access request from a third request agent that represents a third functional device;
loading a third access priority value into a third counter timer, wherein the third access priority value corresponds to another processing function that is provided by the third functional device;
wherein the second functional device has priority access to the memory bus when the decremented second access priority value represents a higher priority than the third access priority value; and
wherein the third functional device has priority access to the memory bus when the third access priority value represents a higher priority than the decremented second access priority value.

25. (Previously presented) The method of Claim 24, further comprising:
decrementing the third access priority value, when the second functional device accesses
the memory bus and a second clock cycle ends;
receiving a next memory access request from the second request agent;
resetting the decremented second access priority value to the second access priority
value;
wherein the second functional device has priority access to the memory bus when the
second access priority value represents a higher priority than the decremented
third access priority value; and
wherein the third functional device accesses the memory bus when the decremented third
access priority value represents a higher priority than the second access priority
value.

26. (Previously Presented) The method of Claim 19, further comprising:
determining whether the memory bus is locked; and
preventing the first functional device and the second functional device from accessing the
memory bus when the memory bus is locked.

27-28 (Canceled)

29. (Currently Amended) A system to manage a memory bus, the system comprising:
a memory bus configured to communicate with a first functional device that provides a first processing function and with a second functional device that provides a second processing function;
wherein the first functional device is represented by a first request agent and the second functional device is represented by a second request agent;
a control register configured to store a first access priority value associated with the first request agent, and a second access priority value associated with the second request agent, and a timer resolution parameter;
wherein the first access priority value corresponds to the first processing function and the second access priority value corresponds to the second processing function;
wherein the control register is configured to dynamically adjust a plurality of priority access values that includes the first priority access value and the second priority access value in response to a user request and to dynamically adjust the timer resolution parameter based on the activity level of the memory bus;
wherein the timer resolution parameter relates to an amount of time associated with a first counting cycle of the first counter timer and a second counting cycle of the second counter timer;
a control unit configured to load the first access priority value into a first counter timer when the first request agent issues a first memory access request, and to load the second access priority value into a second counter timer when the second request agent issues a second memory access request;
wherein the first functional device accesses the memory bus before the second functional device when the first access priority value represents a higher priority than the second access priority value; and
wherein the second functional device accesses the memory bus before the first functional device when the second access priority value represents a higher priority than the first access priority value.

30. (Previously Presented) The system of Claim 29, wherein the first memory access request and the second memory access request are received by a bus arbiter.

31. (Previously Presented) The system of claim 29, further comprising a bus elector coupled to the first counter timer and the second counter timer, wherein the bus elector is configured to compare the first access priority value to the second access priority value.

32. (Previously Presented) The system of claim 29, wherein the first functional device and the second functional device are included within a moving picture experts group (MPEG) video codec processor.

33. (Previously Presented) The system of claim 29, further comprising a control unit coupled to the request agents for respectively receiving corresponding requests for access to the memory bus.

34. (Previously Presented) The system of claim 29, wherein the first functional device and the second functional device are selected from a group consisting of memory controllers, image processors, motion estimation processors, and host/peripheral interfaces.

35. (Previously Presented) The system of claim 29, wherein the first access priority value represents a first maximum latency count and the second access priority value represents a second maximum latency count.

36. (Previously Presented) The system of Claim 29, further comprising a plurality of clocks that time a clock cycle when the memory bus is accessed.

37. (Previously Presented) The system of claim 36, further comprising a bus release mechanism, wherein the plurality of clocks begin the clock cycle when the bus release mechanism releases the first functional device or the second functional device to access the memory bus.

38. (Previously Presented) The system of claim 36, further comprising a bus release mechanism, wherein the bus release mechanism releases the first functional device or the second functional device to access the memory bus after at least one of the plurality of clocks begin to time the clock cycle.

39. (Canceled)

40. (New) The method of claim 19, wherein the amount of time associated with the first counting cycle is the same as the amount of time associated with the second counting cycle.

41. (New) The method of claim 19, further comprising:

loading a first timer resolution parameter into the control register, the first timer resolution parameter corresponding to a first amount of time associated with the first counting cycle; and

loading a second timer resolution parameter into the control register, the second timer resolution parameter corresponding to a second amount of time associated with the second counting cycle;

wherein the first timer resolution parameter relates to an amount of activity by the first functional device on the system bus and the second timer resolution parameter relates to an amount of activity by the second functional device on the system bus.